



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,357	11/03/2003	Oh-Yong Choi	0630-1861P	1165
2292 7590 01/31/2007 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER GUHARAY, KARABI	
			ART UNIT	PAPER NUMBER
			2879	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	01/31/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 01/31/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

**Office Action Summary**

Application No.

10/698,357

Applicant(s)

CHOI, OH-YONG

Examiner

Karabi Guharay

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on RCe, filed on 26 september 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,6,8-14,16 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 5,7,15,17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 26 September 2006 has been entered.

***Response to Amendment***

Amendment, filed on 26 September 2006 has been considered and entered.

Claims 1 & 11 are amended.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6, 10-14, 16 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimizu et al. (US 6188170).

Regarding claim 1, Shimizu et al. discloses a CRT (Fig 1) comprising a panel (3) of which an outer surface is substantially flat (having substantially rectangular effective portion 1), a shadow mask (27) installed with a certain interval from an inner surface of the panel and having a plurality of apertures through which electron beams pass (lines 42-47 of column 5) and formed as a pin-cushion shape (see Fig 3A) in which long and

Art Unit: 2879

short sides of the shadow mask (mask body 27) are inwardly concaved and a mask frame (30 of Fig 3A & Fig 4) for fixing and supporting the shadow mask, wherein at least one of the long (34) and short (28) sides of the mask frame are slanted from ends toward the center of the shadow mask in order to maintain a predetermined interval with the long and short sides of shadow mask (lines 42 of column 5-line 20 of column 6).

Regarding claim 2, Shimizu discloses that the long and short sides of the mask frame are curvedly formed to have predetermined curvatures from ends to centers thereof (see Fig 6A).

Regarding claim 3, Shimizu et al. teach that the following conditions,  $R1 > R3$ ,  $R2 > R4$ , are satisfied in which  $R1$  denotes a radius of curvature of the long side of the mask frame,  $R2$  denotes a radius of curvature of the short side of the mask frame,  $R3$  denotes a radius of curvature of the long side of the shadow mask, and  $R4$  denotes a radius of curvature of the short side of the shadow mask (see Fig 3A).

Regarding claim 4, Shimizu et al. teach that  $R3 > R4$  (see Fig 3A).

Regarding claim 6, Shimizu discloses that a width of the slanted portion of the long side (36) of the mask frame from the end toward the center thereof is equal to or larger than 70% of a width from the end of the long side of the mask frame toward the center thereof and a width of the slanted portion of the short side of the mask frame from the end toward the center thereof (44) is equal to or larger than 70% of a width from the end of the short side of the mask frame toward the center (lines 21-24 of column 6).

Regarding claim 10, Shimizu discloses that an interval between the shadow mask and the mask frame is equal to or larger than 2.6 mm (lines 21-22 of column 6).

Regarding claims 11-12, Shimizu et al. discloses a cathode ray tube (Fig 1) comprising a panel (3) of which an outer surface is substantially flat (having substantially rectangular effective portion 1), a shadow mask (27) installed with a certain interval from an inner surface of the panel and having a plurality of apertures through which electron beams pass (lines 42-47 of column 5), a mask frame (30 of Fig 3A & Fig 4) for fixing and supporting the shadow mask, wherein at least one of the long (34) and short (28) sides of the mask frame is concaved toward the center of the mask frame wherein at least one of short and long side of the mask frame are formed as curved surfaces having predetermined curvatures from ends towards the centers (see Fig 4 ). Claim 13 recites essentially the same limitations as is rejected as claim 3, thus claim 13 is rejected as claim 3 (see rejection of claim 3).

Claim 14 recites essentially the same limitations as is rejected as claim 4, thus claim 14 is rejected as claim 4 (see rejection of claim 4).

Claim 16 recites essentially the same limitations as is rejected as claim 6, thus claim 16 is rejected as claim 6 (see rejection of claim 6).

Claim 20 recites essentially the same limitations as is rejected as claim 10, thus claim 20 is rejected as claim 10 (see rejection of claim 10).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2879

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-9 & 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. as applied to claims 1 & 11.

Regarding claims 8-9 & 18-19 Shimizu discloses all the limitations of claims 8-9 & 18-19 and showed in Fig 3A & Fig 6A that slanted angle in the long side is small and is greater than 0 degrees, but silent about the claimed range.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to obtain the claimed range by experimentation, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *MPEP*

**2144.05 II A**

### ***Allowable Subject Matter***

Claims 5, 7, 15, 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:


Regarding claims 5, 7, 15 & 17, the prior art of record neither shows nor suggests the limitations cited in those claims together with other limitations.

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is 571-272-2452. The examiner can normally be reached on Monday-Friday 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Karabi Guharay  
Primary Examiner  
Art Unit 2879